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INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION

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1. The development of ceramic turbine blades, which was worked on by the Hescho Ceramics Plant, Hermsdorf, together with the MAN Plant, started in early 1944. only one or two of the specialists who had previously worked in this field were still available, and they had worked in some subordinated field. 25X1

2. In late 1951 or early 1952, the Hescho Plant was informed by S. Fomenko and Sergyei Pyotrovich Trofimov of the Soviet Military Administration in Germany that the Central Russian Patent Department of the Ministry of the Interior in Moscow had ordered the resumption of the development of ceramic turbine blades.

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3. The production chief of the plant was Krahl (fnu). Chief Engineer Drechsler (fnu) and Dr Bahlke (fnu) who, at that time, was technical director at the plant, supervised research activities in the field of ceramic blades. Some of the specialists who had previously worked in this field were deported to a plant near Moscow where they were working on a similar project. 2 25X1

4. In connection with the research order referred to in Paragraph 2, Kamell (fnu) and Chief Engineer Drechsler received an order to develop a production procedure for ceramic materials for turbine blades of a high thermal and mechanical resistance. The major problem of the project was to find a porcelain which, at a small coefficient of expansion, would withstand a high degree of strain and would be of a high molecular strength. It was very important to find the most appropriate shape for the center and the dovetailed wedge connections for the blades in the ceramic turbine disc, in order that the unit revolve at the maximum speeds reached by gas turbines. The ceramic blades were to be used for turbo engines for aircraft and for high speed steam turbines; that is, ceramic materials were to be used for parts which, otherwise, would have to be produced of high quality steel.

5. The Moscow Patent Office attached great importance to these developments. 25X1

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Because of the highly increased speed of modern gas turbines and, consequently, because of the increased centrifugal force which had been achieved since 1944, it was requested that not only the material of the blade roots, but also the fastening be able to withstand excessive bending strain. The heat resisting capacity of the material would be decisive in its value. However, no satisfactory solution to this problem and no constructive arrangements had been found. the former cooperation with the MAN Plant had been extremely advantageous, and the Hescho Plant has found no equivalent partner in East Germany to work on the mechanical problems in this field. All studies were, therefore, translated into Russian and forwarded to the plant near Moscow, mentioned above, to be checked and tested, a procedure which required both time and money.

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6. The Hescho Plant was engaged in the development of ceramic turbine blades and took only a minor part in production. Only experimental burning was done in the kilns. However, should the basic problem of producing such blades be solved, the plant would immediately be capable of a large output because available edge mills and kilns were not fully utilized. No difficulties were expected in the supply of spare parts. Machine tools were available and the plant had facilities and personnel for the production of the required parts.

1. Comment: M.A.N. - Maschinenfabrik Augsburg-Nuernberg A.G. 25X1

2. Comment

It is assumed that Plant No 156 in Moscow is working in this field. 25X1